Abstract
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Glycosaminoglycans in Gingival Crevicular Fluid of Patients With Periodontal Class II Furcation Involvement Before and After Guided Tissue Regeneration. A Pilot Study

Fuhua Yan

Dental School, The University of Queensland, Brisbane, Australia.
Rod Marshall

Dental School, The University of Queensland, Brisbane, Australia.
Susan Wynne

Dental School, The University of Queensland, Brisbane, Australia.
Yin Xiao

Dental School, The University of Queensland, Brisbane, Australia.
Dr. P. Mark Bartold

Dental School, The University of Queensland, Brisbane, Australia.

Background: The levels of glycosaminoglycans in gingival crevicular fluid (GCF) are good indicators of underlying tissue turnover. We hypothesize that connective tissue elements in GCF may be used as indicators of tissue maturation underneath barrier membranes. Therefore, we investigated the levels of sulfated glycosaminoglycans in GCF at sites before and after guided tissue regeneration (GTR).

Methods: Six patients were selected on the basis of having at least one Class II buccal furcation involvement on a molar tooth. Each molar furcation was treated with the standard GTR surgical protocol using a non-resorbable expanded polytetrafluoroethylene membrane. Gingival crevicular fluid samples were taken at baseline (immediately prior to insertion of the membrane) and at 1, 2, 3, 4, 5, and 6 weeks (immediately prior to removal of the membrane). Glycosaminoglycan levels were determined using an Alcian blue dye detection system.

Results: The mean levels of chondroitin sulfate and total sulfated glycosaminoglycans in GCF significantly decreased during the first 4 weeks after GTR surgery. By week 5, the levels began to rise, and by week 6 the levels had returned to baseline levels.

Conclusions: Sulfated glycosaminoglycans can be monitored in GCF at healing GTR sites. It is proposed that this is a useful means of monitoring the status of the regenerating tissues. However, further longitudinal studies are required to assess if the sulfated glycosaminoglycans can be used as indicators of tissue maturation under guided tissue membranes used to treat periodontal defects. J Periodontol 2000;71:1-7.